

# Cardiac Metastases from Malignant Melanoma: The “Charcoal Heart”

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The column in this issue is supplied by Herbert L. Fred, M.D., M.A.C.P., and Hendrik A. van Dijk, both from McGovern Medical School-UT Health, Houston, Texas. Dr. Fred is emeritus professor of medicine and a well-known medical educator and diagnostician. A graduate of Johns Hopkins University School of Medicine, he has authored just under 500 publications including six books. Mr. van Dijk, former director of the University of Texas Health Science Center Medical School’s Graphic Communications Group, has devoted 50 years to biomedical communications and is a national expert in that field.

## ILLUSTRATIVE CASE

An asymptomatic 38-year-old woman collapsed and died while watching television. At autopsy, metastases from malignant melanoma riddled many body parts, especially the heart (image). Black tumor nodules peppered the pericardium and endocardium and replaced much of the myocardium—hence the term, *charcoal heart*.<sup>1,2</sup> There was no evidence of pulmonary thromboemboli, infection, or blood loss. Her sudden death presumably resulted from an arrhythmia. The site of the primary melanoma was never established.

## MORE ON METASTATIC MELANOMA OF THE HEART

- It is found at autopsy in approximately 64% of patients with metastatic melanoma, the highest percentage in any type of malignancy.<sup>3</sup>
- Mechanism of spread is hematogenous.<sup>2,3</sup>
- Quantity of deposits is far greater than that of any other metastatic malignancy (e.g., one heart weighed 2,450 gm).<sup>4</sup>
- Clinical manifestations are often absent or nonspecific, even when the tumor load is huge.<sup>3</sup> Nevertheless, in patients with a history of melanoma, telltale developments can include acute pericarditis, rapid increase in cardiac size on chest imaging, pericardial effusion (with or without tamponade), rhythm disturbances, conduction defects, or new-onset heart failure.<sup>3</sup>
- Premortem diagnosis is made with imaging evidence of tumor invading the heart<sup>2,4</sup> or detection of malignant cells in pericardial fluid.<sup>1</sup>
- Therapy is symptomatic and palliative.
- Cause of death varies: widespread metastases in most; marked involvement of the central nervous system with hemorrhage in some; and cause unclear but sudden in a few.<sup>3</sup>



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